

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	IDDAN, Gavriel J. et al.	Examiner:	TOWA, Rene T.
Serial No.:	10/527,735	Group Art Unit:	3736
Filed:	March 3, 2005	Confirmation No.	1893
Title:	IN-VIVO SENSING SYSTEM		

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DOCUMENT IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

This Document in Support of a Pre-Appeal Brief Request for Review is being filed in response to the final Office Action dated October 28, 2010 issued by the United States Patent and Trademark Office in connection with the above-identified Application. A response to the October 28, 2010 final Office Action is due January 28, 2011. Accordingly, this paper is being timely filed.

REMARKS/ARGUMENTS

I. Status of Claims

Claims 1-12, 14-15, 18, 24-29, 32-33, 36, 38-40, 43 and 45-48 are pending in this application. Claims 1-12, 14-15, 18, 24-29 have been objected to because of informalities, and all pending claims 1-12, 14-15, 18, 24-29, 32-33, 36, 38-40, 43 and 45-48 have been rejected.

II. Rejection of Claims 1, 3-4, 7, 10-12, 14, 24-29, 32, 36, 40, 43, 45 and 47-48 Under 35 U.S.C. § 103(a) over Meron et al., Dunne and Canton

In the final Office Action, the Examiner rejected claims 1, 3-4, 7, 10-12, 14, 24-29, 32, 36, 40, 43, 45 and 47-48 under 35 U.S.C. § 103(a) as being unpatentable over Meron et

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al. (U.S. Patent Application Publication No. 2002/0109774) in view of Dunne (U.S. Patent No. 6,626,834) and Canton (U.S. Patent No. 6,145,393).

Meron et al. teach an imaging capsule having multiple lenses and mirrors to form multiple image paths so as to image in different directions of the capsule. The Examiner states that Meron et al. fail to teach an in vivo sensing system. Applicants point out that the device of Meron et al. has multiple fixed lenses and mirrors to form multiple fixed image paths that allow imaging in different directions of the capsule, such that the fields of view of the device of Meron et al. always stay the same.

Dunne teaches a scanning device that can make a volumetric scan of a conical scanning field as a result of being mounted along two rotational axes within the housing and being rotatable by electromagnet modulation. Applicants point out that the scanning device of Dunne is fixedly mounted about bearings 30a,30b and 32a,32b, so as to rotate about two generally perpendicular axes of rotation (see Dunne, at column 9, lines 50-58, and column 10, lines 26-37).

Canton teaches a floated gimbal instrument platform that provides a stable optical path for optical instruments. The instrument platform has outer and inner vessels each with a transparent viewing port, a transparent suspending fluid filling the outer vessel and in which the inner vessel floats in neutral buoyancy, an optical instrument secured inside the inner vessel, spacing studs that centrally position the inner vessel within the outer vessel, and jets that align the second viewing port with the first viewing port and that rotate the inner vessel in the suspending fluid. Applicants point out the inner vessel does not capture images in any direction with respect to the outer vessel. Instead, images are captured only through the respective viewing ports when in alignment. Misalignment between the viewing ports is compensated for by rotation of the inner vessel, and any translational forces applied to the platform are dampened by the fluid, thereby eliminating jitter.

Independent claims 1, 32 and 43 recite that the at least one imaging device "is freely movable within the housing/outer covering in any rotational direction without being mounted to the housing/outer covering". Independent claims 1 and 32 recite that the friction reducing mechanism/liquid disposed between said housing/outer covering and said imaging device "permit[s] free movement of said imaging device within said housing/outer covering".

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Applicants' device is intended to allow the imaging device to be freely movable in any rotational direction within the housing, without being mounted to the housing, so as to allow images to be taken from any direction. As such, the field of view can be changed in order to acquire images from all different sides of the device.

In the final Office Action, the Examiner stated that, since Meron teaches a system that may stumble in a rotating motion through the GI tract of a patient during the imaging process, while Canton teaches the importance of having a system having a stabilized platform, it would have been obvious to modify the system of Meron with Dunne with at least one imaging device that is freely movable within the housing without being mounted to the housing as taught by Canton. The Examiner further stated that it would have been obvious to modify the system of Meron with Dunne and Canton with at least one imaging device that is freely movable within the housing in any direction without being mounted to the housing as taught by Canton. The Examiner concluded that the combination of Meron, Dunne and Canton does suggest a system having at least one imaging device that is freely movable within the housing in any rotational direction without being mounted to the housing.

However, Meron et al., Dunne and Canton, alone or in combination, do not teach or suggest a system wherein the device has an imaging device that is freely movable within the housing/outer covering in any rotational direction without being mounted to the housing/outer covering, as recited in independent claims 1, 32 and 43, and that has a friction reducing mechanism/liquid disposed between said housing/outer covering and said imaging device to permit free movement of said imaging device within said housing/outer covering, as recited in independent claims 1 and 32.

Furthermore, Meron et al., Dunne and Canton, alone or in combination, do not teach or suggest at least one directional actuator external to said housing ... so as to change the orientation of said imaging device/image sensor to any direction with respect to said housing, as recited in independent claims 1 and 32, and the step of capturing images from any of said orientations, as recited in independent claim 43.

The Examiner has not shown where any of the cited references disclose to change the orientation of said imaging device/image sensor to any direction with respect to the housing or to capture images from any orientation with respect to the housing. In this regard, in

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Meron, the back portion of the capsule housing is opaque, and the device captures images only in the forward direction of the capsule and without the capability of the imagers to rotate. Similarly, in Dunne, the back portion of the housing is opaque, and the device captures images only in the forward direction of the device and with the capability of the imagers to rotate only about two axes. Furthermore, in Canton, the back portion of the outer vessel surface is opaque, and the device captures images only when the respective ports of the inner and outer vessel are aligned. None of Meron et al., Dunne or Canton allow changing of the orientation of the imaging device/image sensor to any direction with respect to said housing to capture images from any orientation, as recited in independent claims 1, 32 and 43.

Independent claims 1, 32 and 43 are therefore allowable. Dependent claims 3-4, 7, 10, 14, 24-25, 27, 29, 36, 40, 45 and 47-48 include all the limitations of one of amended independent claims 1, 32 and 43, and are therefore likewise allowable. Applicants therefore request that the Examiner withdraw the rejection of claims 1, 3-4, 7, 10, 14, 24-25, 27, 29, 32, 36, 40, 43, 45 and 47-48.

III. Rejection of Dependent Claims Under 35 U.S.C. § 103(a) over Meron et al., Dunne, Canton and Kilcoyne et al./ Kovacs et al./ Mullick et al./Gross

In the final Office Action, the Examiner further rejected:

- claims 2, 6, 8-9, 18, 33 and 38-39 as being unpatentable over Meron et al. in view of Dunne and Canton further in view of Kilcoyne et al. (U.S. Patent No. 6,285,897).

- claims 5, 18, 38 and 39 as being unpatentable over Meron et al. in view of Dunne and Canton and further in view of Kovacs et al. (U.S. Patent Number 5,833,603).

- claim 46 as being unpatentable over Meron et al. in view of Dunne and further in view of Mullick et al. (U.S. Patent Application Number 2003/0167000).

- claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Meron et al. in view of Dunne and further in view of Gross (U.S. Patent No. 5,318,557).

Applicants assert that Kilcoyne et al. do not solve the deficiencies of Meron et al. and Dunne, as discussed above with respect to amended independent claims 1 and 32, such that Meron et al., Dunne and Kilcoyne et al., alone or in combination, do not teach or suggest the system as recited in amended independent claims 1 and 32. Accordingly, amended

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independent claims 1 and 32 are allowable, and dependent claims 2, 6, 8-9, 18, 33 and 38-39 are therefore likewise allowable.

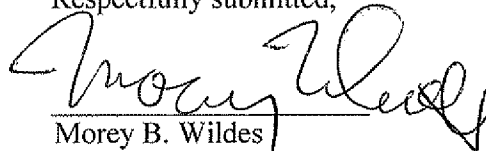
Applicants assert that Kovacs et al. et al. do not solve the deficiencies of Meron et al. and Dunne, as discussed above with respect to amended independent claims 1 and 32, such that Meron et al., Dunne and Kovacs et al., alone or in combination, do not teach or suggest the system as recited in amended independent claims 1 and 32. Accordingly, amended independent claims 1 and 32 are allowable, and dependent claims 5, 18, 38 and 39 are therefore likewise allowable.

Applicants assert that Mullick et al. et al. do not solve the deficiencies of Meron et al. and Dunne, as discussed above with respect to amended independent claim 43, such that Meron et al., Dunne and Kovacs et al., alone or in combination, do not teach or suggest the system as recited in amended independent claim 43. Accordingly, amended independent claim 43 is allowable, and dependent claim 46 is therefore likewise allowable.

Applicants assert that Gross does not solve the deficiencies of Meron et al. and Dunne, as discussed above with respect to amended independent claim 1, such that Meron et al., Dunne and Gross, alone or in combination, do not teach or suggest the system as recited in amended independent claim 1. Accordingly, amended independent claim 1 is allowable, and dependent claim 15 is therefore likewise allowable.

In view of the foregoing amendments and remarks, Applicants assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

Respectfully submitted,



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